WINTER CAMPAIGNS;

THE

Test of Generalship.

Every Disadvantage may be removed by *Skill*, or *Fortune*, except TIME. *If a General has* TIME *against him he* MUST *fail.* And, conversely, TIME *is the best* ALLY.

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WINTER CAMPAIGNS.

HOW GREAT GENERALS BRING CANNON, &c., INTO THE FIELD.

HOW TO GET ARTILLERY AND SUPPLIES FORWARD.

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If a General has TIME *against him he* MUST *fail.* And, conversely, TIME *is the best* ALLY.

Now that the Winter Campaign again appears to be imminent in Virginia, the same questions present themselves in regard to the difficulties of transporting cannon and military equipages over *miry* roads, as those whose solution excited the attention of enterprising officers during the fall, winter and early spring of 1861-'62. This problem demands immediate attention, in as much as it was urged as an excuse for the inaction of the Army of the Potomac during that dreary winter encampment, that it was utterly impossible to pass artillery, baggage and commissariat trains over the almost fathomless Virginia sloughs of despond.

During the months of January and February, 1862, while our capital presented the mortifying spectacle (if not actual reality) of being invested by the Rebel main army—whose wings extended from their left in face of Harper's Ferry, to their right on Matthias' Point—the writer was engaged, at the repeated request of a dear and honored relative, (since dead upon the field of honor, when he had attained the height of his ambition and the highest rank in our army,) in investigating this question, and endeavoring to discover how European armies moved their artillery and trains over bad roads, and

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This article is, in a great measure, an aggregation of extracts from a series of letters written to a distinguished relative and friend in the field, during the winter and early spring of 1861-'62; consequently it should be read, not so much as to what doing, but what was not done and might actually have been accomplished at that period. J. WATTS DE PEYSTER.

were thus enabled to carry on winter campaigns, whose astonishing results shine as wonderful memorials of what human perseverance and military determination can accomplish. This investigation was unfortunately unsuccessful as to the means, although entirely successful as to the evidence that great obstacles were surmounted.

In a previous publication on PRACTICAL STRATEGY AND MODERN TACTICS, it was stated, and the attempt made to demonstrate the fact, that Modern War, as it is now understood and carried on, dates from the advent of Gustavus Adolphus (Midsummer-day, 1630), upon the battle-fields of Germany.

Consequently let us take that date as a starting point. It was about the commencement of the 2d decade of that terrible military struggle, the first phase of military operations as at present practised.

Any one, soldier or laic, who will examine the annals of the Thirty Years' War will be speedily convinced that the bad roads of Germany, at the worst seasons of the year, did not effectually interrupt military operations, and that some of the most marvellous achievements, in the way of marches, were performed in the late fall, winter and early spring months.

Consider, as instances, Torstenson's march of five hundred miles in fifteen days in November, 1643, and his equally famous passage of the Pine and Ore mountains in January, 1645. These are so often adverted to because they were the most stupendous efforts of the kind, but there are numerous other examples of which a critical examination will discover interesting incidents in the strictly-military records of that era.

The surprise of the French under Marshal Guebriant, at Tuttlingen (who considered themselves sufficiently protected by the severity of the winter), 24th November, 1643, under cover of a severe snow-storm, by HATZFELD and MERCY, proves that bad weather is no impediment to determined generals and acclimated troops. And the campaigns of Charles X of Sweden, in Poland and Denmark in 1655-'8, demonstrate that where there is a will there is a way. What is to be said of his crossing the Little Belt on the ice, in 1658, and besieging Copenhagen in the deep snow? Overleaping the Spanish Wars, which were not destitute of examples, in which we see Villars drinking brandy with his grenadiers in the trenches before Kehl, 25th February, 9th March, 1707, telling them stories and exciting them with the idea that only the French knew how to take fortresses in winter, we come to the first Silesian March campaign—which terminated with the battle of Mollwitz, fought April 10, 1740, with the snow two feet deep on the ground. Consult Carlyle's Frederic the Great as to the difficulties overcome by the Prussians during their advance into the disputed territory. It will well repay perusal.

[By the way, it was not the extreme cold, the ice and the snow which

used up Napoleon's army, particularly the draft horses, in his terrible retreat from Moscow. On the contrary, it was the sudden thaw—just like one of our well known January thaws—which set in after a period of intensely cold weather, and converted the snow and ice into slush and sludge, and transformed the ice-fields, which had previously bridged the rivers and expedited transit into natural *frosty rams*, which shattered the pontoons and military bridges, and almost precluded crossing. Nevertheless, Napoleon's generals did get troops, cannon and equipages across the Beresina and forward, with whose support they had won at Krasnoi and traversed the Russian armies; and afterwards saved the relics of these extricated corps to serve as *cadres*, or *nuclei*, for new armies in the campaign of 1813–'4. Consider what the French and Russians actually did accomplish, despite the freezing and thawing and horrible cold; the French pontoniers constructing a practicable bridge across the Berisina, although up to the waist and sometimes up to the shoulders in its ice-filled waters; both armies fighting, manœuvering and bivouacing in weather frightful even to contemplate. Well might the motto "*To fight and* TO SUFFER," be the one deemed most appropriate to the military career.]

Those who consider Winter campaigns impracticable are like the Austrians who were making arangements for winter quarters on account of the increasing cold after their victory at Breslau, 21st November, 1757. Frederic and his Prussians, however, were men of a different stamp. From his wonderful victory at Rossbach, 5th November, 1757 he marched about 250 miles*, united his victorious army with the beaten troops of the Duke of Bevern, and, on the 5th December, achieved the still more marvellous victory of Leuthen. Previous to the battle he remarked "The (Austrian) fox has left his hole and I will punish his impertinence." Accordingly he destroyed or captured as many Austrians as his own army actually numbered. During the period of this march the cold was extreme. The night after the battle of Leuthen, which Napoleon characterized as "a master-piece of movements, manœuvres, and resolution," "sufficient to immortalize Frederic," while the Prussians were lying on their arms upon the field, encumbered with dead, dying and trophies, one of Frederic's grenadiers began to sing the first line of the hymn (known as the German "Te Deum" of M. Rinkart, d. 1649).

"Now let us all thank God!"

Little by little, the 25,000 victors took it up and joined in the thanksgiving. "A sublimer 'Te deum' was never performed."

To this cavillers may urge that men and things have changed since those

*In the next year, 1758, Frederic displayed another instance of his expedition In order to save Custrin he accomplished between 225 and 250 miles in 11 days, in a sandy country and at the hottest season of the year.

remote days, and ask why the reader is carried back one or two centuries, of which the records are uncertain. To this there is a short and decisive answer. To students versed in foreign languages, who have the resolution to wade through musty volumes written in bad Latin, worse German and difficult French, there are plenty of details carefully collected, well authenticated and *satisfactory*. The Thirty Years' War and Spanish Wars can be studied out not only in regular military chronicles, but in an illustrated work, the *Theatrum Europæum*, not the only one of its kind, which fills twenty-one large folio volumes, and occupies the same relation to the XVIIth century that *Harper's Weekly* and kindred papers hold to the XIXth.

Can it be possible that the Quartermaster's Department then was more powerful and practical than now? To concede this would be to concede that science has retrogaded not advanced in 200 years of almost continued war, and amid the astonishing progress of every other branch and of art. Could it, then, have possessed greater means and material? We know that it did not possess a tithe of what our administrative services enjoy. What constitutes the difference then? The men at the head of affairs, at that time, were *men*, or, if our leaders are men, they were giants in intellect, in *will*, in resources, and in every military instinct.

It is our Quartermaster's service which is in fault; and what it actually does achieve is neutralized by lukewarmness, half-heartedness and semi-treason in other branches; where, when, how, cannot be discovered or has not been revealed.

[Quartermasters who plead the impossibility ot feeding large armies from full magazines, within 25 milas of the field of active operations, are politely referred to the accounts of what Frederic and Napoleon accomplished, in a great measure without magazines, by making "war support war." There are many proofs of this on record, of which two are selected. In the fall of 1758 and winter of 1758–9, the third of the Seven Years' War, Frederic performed marches which were most extraordinary. "Though encumbered with a large army, which it is always difficult to provision for a long march in rapid motion, yet the King was always on the line of communication from Saxony, by Bautzen, Gorlitz and Lauban into Silesia, in which the Austrians could never take any position effectually to prevent his moving; and he was thus enabled to support his army from both provinces during the whole war, by marching from the one to the other as the occasion required."

Meanwhile the Austrians, with equal advantages, accomplished nothing.

In December, 1806, through roads almost impassable, through mud knee-deep, mud occasioned by a long-continued thaw, and the passage of innumerable military equipages, amidst storms of snow, when the soldiers often sunk up to the middle in morasses, bivouaced for 16 hours together on the cold, damp ground, or plunged into streams swollen by rain and filled with the ice of a Polish winter, from 150,000 to 200,000 opponents, by the grinding system of "making war support war," contrived to find resources. This campaign lasted from the middle of December, 1806, to the end of February, 1807. During this time, although his troops were half-starved, Napoleon was enabled to maintain himself almost altogether by requisitions on the ravaged and impoverished lands occupied by his armies. Nor were the Russians behind hand in spoiling the non-combattants. Still they were nearer their base of supplies.

As a proof of what supples might be derived from Rebel territory, if the requisitions were justly but sternly enforced and economically administered, take as an example the fact that Old Prussia, in the spring of 1807, "kept even the enormous multitude" of regular soldiers, certainly much exceeding 100,000 combatants and camp followers, belonging to the French army which afterwards conquered at Heilsberg

and Friedland. About two-thirds of the 155,000 infantry and 35,000 cavalry which Napoleon had in hand, were "concentrated over a space of twenty leagues and amply supplied with provisions." Fidelity in providing and economy in distributing, might be excessively disagreeable to money-making contractors, but just in as great a degree as it was disagreeable to speculators, it would be agreeable to the army and the nation, particularly the tax-paying portion.

If by the term "Old Prussia" the reader is to infer the present governments of Dantzic, Marienwerder and Konigsberg, the district thus designated is nothing like as large as that portion of Virginia embraced between the Alleghanies, the Potomac and James rivers, which comprises the Shenandoah valley, the granary of the State. Or, to give a better idea, that portion of our State embraced within the boundaries of the Erie Canal, North River, New Jersey and Pennsylvania line, and a line drawn from Binghampton to Syracuse; with this difference, however, that the greater part of the the portions cited, of Virginia and New York are renowned for their productiveness.]

The facts above cited about previous wars being known—and they are incontrovertible—the certainty that Winter Campaigns or operations were carried on successfully 200 years ago, demonstrates that either a great *captain*, the greatest gift of Providence, at a crisis to a nation, is wanting; or men, as argued by many, *have* deteriorated, to prevent similar enterprises in this war. That men of our day are rather superior than inferior to the men of the past, is mosaiced with the blood, sweat, corpses and bones of our brethren upon the rebel mire and soil, and engraved with their steel in ineffaceable characters upon the rocks of the Alleghanies. Such being the case, the examples of the past present themselves both as lessons and reproaches to the present, either to the commanding officer or administrative departments. The figure of the gout-tormented, litter-borne Torstenson, whose enterprises had wings while his members were fettered with the fiercest of maladies, rises up as a grim and unanswerable testimonial that our leaders are lacking in those qualities, or that concentrated power, which, in him, made intrepid mind the master of infirm matter; qualities which rendered the invalid, who had been kept at his post by the magnificent avowal that he could not be replaced, the irresistible *motor* of men and material, the victorious defier of winter, want and what amounts to military weakness and ——, let the reader supply whatever word he thinks courteous and excusable.

The fact is, the armies of the XVII Century were accompanied to the field by very large trains of artillery and supplies of forage, and Torstenson manœuvred numerous batteries, whose evolutions but not numbers are mentioned, on the February field in Jankowitz, 1645. All his artillery and his trains were brought, with his army destitute of shelter and comforts, through the Pine and Ore mountains, by roads which never before had been traversed by any species of wheeled conveyance, in the preceding January, in an exceedingly severe winter, bridging torrents and rivers, fording shallow streams, and encountering, with far less material assistance, all that Gorgey in like manner overcame in his strategic operations *over* the Carpathians in the winter of 1848–'9.

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[When Marshal Belleisle made his escape from Prague, on the 16th December, 1742, with 11,000 infantry and 3,000 cavalry, 30 pieces of cannon and 12 days' provisions, he performed a succeessful winter march which has often been compared to Xenophon's Retreat of the 10,000. Over ground covered with snow and frozen marshes never before trod by the foot of man, through broken and unfrequented roads, amidst the intensest cold, the incessant attacks of regular and irregular enemies' corps and swarms of unrelenting Partisan horse. Belleisle, like Torstenson, crippled by the gout in his hip, directed the march of his column from a litter. Having lost 800 men in the snow, and as many more, perhaps, in conflicts with the Austrians, he reached Egra on the 29th December, 1742, a distance of nearly 100 miles in an air line, without losing a cannon or leaving a trophy in the hands of the enemy. Thence he continued his glorious march 200 miles, as the crow flies, to the Rhine, and brought back into Alsace the flower of the French Army, every one of his cannon, and every thing whose loss would have proved a trophy to the Imperialists. From Fredericksburg to Richmond is less than sixty miles. Put that and this together.

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The winter of 1759-60 was one of unexampled severity. For fifty years such cold had not been known in Europe. Notwithstanding the severity of the season, and the scanty clothing and feeding of his troops, Frederic advanced and drove back all the advanced posts of the Austrians This Winter Campaign cost more than two battles; 4,009 men perished in 16 days so that it was said of both armies "they died like flies." Still Frederic was justified, for he redeemed, in some measure, the terrible losses of the preceding campaign, and was enabled to present a better front when operations were renewed.

In regard to the cold, it is said to have been almost insupportable. If the statements examined are correct, the thermometer fell to 33 deg below zero, at Bareith, on the night of the 15th December, 1759. Birds dropped dead, frozen in their flight; at Leipzig, ten sentinels were frozen to death; infectious diseases prevailed in both armies; a pestilential contagion raged among the cattle, and famine in Saxony completed the list of all the miseries which can afflict mankind.]

Few persons will take the trouble to read military history closely, and ordinary history seldom goes into the details of military movements. Were they to do so, they would find that some of the successes of great commanders, which seem inexplicable, are readily accounted for by their bringing armies forward and through undefended districts deemed impassable, and therefore in want of no artificial barriers. Bonaparte's passage of the St. Bernard was easy in comparison to McDonald's passage of the Splugen, and yet both were child's play when compared with Hannibal's march from Spain and through Gaul and his passage of the Alps into Italy.

These are well-known achievements, yet how little of their details has been handed down to us, or the consequent sufferings considered by the general reader. Moreover, how few individuals have ever heard of Hannibal's subsequent hardships and marches in the Appenines, which lost him so many of his cavalry horses and all his elephants but one; or of that expedition into Etruria? three days and three nights through marsh and morass, inundation and fog, which cost the Carthagenians almost all their remaining horses, and their great leader one of his eyes, in consequence of inflammatory disease which was superinduced by his exposure, advancing, amid his troops, on the back of his only surviving elephant. The result, recompensed the sufferings and losses. It was the crowning victory of Thrasimene, the slaughter of 15,000 Romans, the death of the Consul Flaminius.

There is a similar parallel march in our annals of the West. Unfortunately the heroic leader's name has escaped the writer's memory, but his portrait, with an allusion to this very expedition of Hannibal on the frame, hangs (he thinks) in the Secretary of War's office at Washington. Another parallel is Villars' passage of the Black Forest on April 30th—May 8th, 1703, in which the sufferings of the French Army were so great, that although the result was successful, Villars calculated that every day of subsequent march would have killed 2,000 horses. But the exact counterpart (in petto) of Hannibal's *wading* feat, was Villars' advance through an inundated country to a victory which cost the Imperialist allies 50 cannons and an immense quantity of commissariat and ordnance stores, besides such accumulations of food destroyed by themselves that the rivers ran white with the flour thrown into their currents. On this occasion the French infantry charged about a mile through water up to their shoulders, and the horses of the cavalry were in many places compelled to swim. This was in the spring of 1706, and resulted in the capture of Lauterburg, Drusenheim and Hagenau.

As an offset to Villar's feat, take the Prussian success at Langen Salza, 9th February, 1751, where despite a rapid thaw which inundated the banks of the Unstruth, the Prussian corps made their way across and inflicted a loss upon the enemy of 5,000 men, several pieces of artillery, and a large magazine. About the same time the French fell back before the Prussians and their allies, destroying numerous magazines in their retreat; but the pursuers followed them up with so much rapidity that many were saved. One alone contained no less than 80,000 sacks of meal, 50,000 sacks of oats and 1,000,000 rations of hay. Thus the victors were enabled to follow up their success by the very preparations made by the conquered to resist them.

Numerous other examples might be cited, but they would occupy too much space. With three we complete the list for the present.

1. The invasion of N. E. Italy by the Pasha of Bosnia, in October, 1477. The whole of Friuli was ravaged to the banks of the Tagliamento. During this forced march, to turn or surprise the Venitian positions, the Turks moved their cavalry directly across the intervening mountain chains, letting them down with ropes over the precipices which threatened to arrest their advance, and hauling them up again on the other side of the vallies.

2. Freundsberg's passage of the Alps, in November, 1526, through the Val Sabbia into Italy. When he traversed the horrible depths of snow and yawning ravines of the winter-barricaded mountains, the German hero, to set an example to his Landsknechts, despite his corpulence, trudged gaily along in their midst, leaning upon a soldier walking before, while one behind shoved him ahead, Freundsberg meanwhile steadying himself with a lance. The result was he brought such reinforcements to Bourbon that he was enabled to capture and sack Rome, although neither the French nor the German leader lived to witness the result of their energy and heroism.

3. The "fearful and marvellous" march of the Imperial Army, the greater part of the infantry and artillery "across the frightful and hitherto impassable rocks of the Val Fredda," the cavalry by the Val Suga, the rest of the infantry and artillery by lateral passages, in May, 1701. The artillery and baggage were drawn along by ropes or borne on the shoulders of men, and lowered over precipices with derricks; and such were the difficulties which were overcome, that, had Prince Eugene accomplished no other military feat except this, his name would still stand well among the generals of modern times. A picture of the methods employed in letting down the guns lies before the writer. It is at pages 326-7, vol. XVI, *Theatrum Europœum*.

Thus the Alps, nor any other mountains in fact, have never proved barriers, in any age, to fearless enterprise. Hannibal crossed them farthest to the West, B.C. 217; Prince Eugene farthest to the East, A.D. 1701. Between these two the Emperor Majorian passed them in a severe winter, about A D. 457, himself sounding the depth of the snow with his staff. Bonaparte and McDonald, A.D. 1800; Suwarrow in the preceding year. Of all these, Bonaparte's passage deserves the least credit and yet is the most celebrated. The next best known is Hannibal's, and yet McDonald's and Suwarrow's are incomparably the most stupendous efforts. When Suwarrow reached the Devil's Bridge and found it broken down, he passed the awful chasm by an extemporised bridge of trees, lashed together and secured with the sashes of his officers. Bonaparte's achievement was not so great as Eugene's, 99 years before, yet how few have ever heard of the latter. Such is the evanescent fame for which men peril everything that is dear and lasting.

There is no disputing that the artillery and military equipages of the previous centuries were much more cumbersome than those of the present time; the harness was heavier and more clumsy, and the draught was less philosophically applied. The means of transport were far more unwieldy, and we see them in old pictures hauled along by crowds of men, or else propelled by groups of soldiers assisting the teams over bad places. It is astonishing what amounts of material was carried with the troops, and how quickly it was brought forward, whither and whenever it was necessary. The mechanical appliances are not explained. The *how* is unknown, the result is patent. To the chronicles of those times, we repeat, we refer doubters, not as to clearly defined means and measures, but as to records and results.

Let, however, the past glide with its wonders of rugged scenery, bizarre costumes, rude appliances and savage simplicity from the stage of the imagination. Shut your eyes to the intervening scenes of the military drama and open them to the spectacle of Paskiewitch passing the Saganlugh and marching from victory to victory, and that of Drebitsh crossing the Balkan, untraversed by carriage routes, or availing himself of tracks which hitherto the camel, the horse and the ass had alone travelled. Can any of these achievements be denied? Dare any one attempt it in the face of so many military records?

What was the reason that nothing stopped the Russian Erivanski and Sabal kanski? They were *captains*, and their troops felt the impress of discipline and the impulse of master resolution. Apply the same *motors* to our armies, and Virginia sloughs will become as Macadamized roads. Consider what means quick-witted intelligence suggested to Bernhard of Saxe-Weimar, and how successfully his energy applied them. In 1635 his retreating army reached the Saar at Walderfingen. There was no bridge and he was destitute of a pontoon train. Close behind him came thundering on the host of Imperialists under Gallas. Bernhard improvised a bridge of wine-casks and crossed in safety, almost under the guns of his outwitted foe.

Prompter, dismiss the scene and let Asiatic and European Turkey, rolling aside, find themselves replaced by the plains of the Vistula. Contemplate the exploits of Skrzynecki. Behold him defeating the Russian army on five fields in succession,* and then, startled at his own success, pausing because, after achieving so much, he suddenly remembered that the roads were bad. "On! complete the work of liberation!" murmured his patriotic army. "Why cannot we push ahead to finish our success?" "The roads are too deep; we cannot bring forward with us the artillery," replied Skrzynecki to the reproaches of his devoted soldiery and the condemning sentiment of his subordinate generals. Listen to the unanswerable reply of the indomitable Prodzynski, his second in command, "On! *decide the affair with our bayonets; if we cannot get our cannon forward the chances are still equal, for the Russians cannot budge theirs.*" Resolute Prodzynski, irresolute Skrzynecki. Mark the result. Where is Poland? She actually stood upon the threshold of liberty; the timidity of one man held her back, and thirty years of tyranny rest upon the soul of him who turned his hand from the plough in the nearly completed furrow.

Alas! alas! that the destinies of mighty nations should depend upon the irresolution and want of energy of individuals.

Whistle off Poland, whistle on Hungary. Now we have something tangible. The transitions of our tragedy have brought us down to within 14 years. Again the fate of a gallant nation trembles in the hands of one man. It is Gorgey, as prominent in the iron texture of his will and the brilliancy of his genius, as he rides conspicuous, in his gold-laced scarlet uniform. Accumulate the rigors of the seasons, the horrors of disorganization, want and indiscipline around him; irresolution can find no loop hole to creep out of here, supineness no excuse to palliate inaction, for doing less than he did. Storm-spirit, war-spirit, penury, dilapidation, spectres which dissolve before the

* Major Hordynski states that from 10th Februery to 10th March, 1831, 45,800 Poles with 96 guns, beat 200,000 Russians with 300 cannon, in 13 sanguinary battles, besides over 26 skirmishes, in all which Diebitsch lost one-third of his force.

eyes of energy into fog-wreaths, but arrest common men as though they were material realities; realities, too, however, of men and material encompassed him like a lion about to spring, but beset with toils and hunters. Did Gorgey stop or shrink from encountering them? He tore the nets asunder, he trod winter under foot, he passed over the bodies of his encompassing enemies, he waded waist-deep, breast-deep through the snow-fed, ice-chilled torrents and inundations; he tramped on through snow, slush, sleet, rain, mire, and at Tapio-Bicske, morasses and quicksand; he carried with him army and armaments, and Hungary like Poland stood thundering at the very portal of independence. Have we a Skrzynecki here that Hungary is enslaved? No! the very resolution which would have saved Skrzynecki lost Gorgey. In the latter it assumed the phase of diabolical pride, and he sacrificed Hungary to his parricidal temper. Still, he got his cannon and military equipages ahead; and onto the field as long as he *willed* it, through sloughs which those of Virginia may equal but can not exceed.

Now to the suggested measures, proofs of whose success may have been already furnished We will see hereafter what travelers may say of Hungarian mire and Transylvanian roads.

When these last have been examined, who will aver that the proofs hereinbefore and after are not sufficient to demonstrate that Winter Campaigns are practicable under the most adverse circumstances.

How shall *we* get our cannon forward? Let us dismiss the consideration of all complicated appliances and only reflect upon simple means, ready to the hand in a wooded country.

One great difficulty of moving guns over bad roads or deep soil arises from the fact that the greater part of the weight is so far to the rear and immediately over the rear axle. This makes the gun-carriage proper plough as it were.

To obviate this, several methods have suggested themselves:

1st. To bring the weight nearer to the draft, that is to the team, by lashing the stock and gun directly to the splinter-bar, in order that the draft would be applied, not indirectly *through* the pintle, but *directly* to the gun and rear axle through the lashings or guys arranged so as to bear upon the weight.

2d. Just as there are two sets of bed-plates on a siege-carriage, in order that the weight of the gun may be brought forward and placed more upon the limber, resting against the traveling bolts, so some such arrangement might easily be applied to all field guns.

3d. In the English service the horses draw *three abreast*, likewise in the Swedish, why not four? This would nearly quadruple the draft capacities of a doubled team. Twemlow, in his Tactics and Strategy, again and again impresses the beneficial result derivable from doubling teams to transmute

reserve into galloper guns (horse artillery). Colonel Nicketin (Russian) Sacken's corps, abandoned 36 guns to get another 36 into action more rapidly. and history records the effect of that abandonment of artillery upon Napoleon's plans at Brienne, February 1, 1813. At Montmirail, February 11, 1814, fifty hussars and hulans, Sacken's corps again, aided in bringing off *each* of the Russian guns over very heavy ground by attaching their lasso ropes. The Marquis de Terney suggested that reinforcing batteries might be moved to the front with the teams of the guns *refused*, i. e., not engaged.

If the English were able to mobilize 32-pounders, weighing 42 cwt., so that they could be used as field guns, applying 12 horses, harnessed three abreast, does it not seem strange that 12 horses, harnessed in the same manner, or even four abreast, as has been practised, cannot be made to draw field artillery through mud like glue? Each of these Anglo-Crimean batteries comprised 280 non-commissioned, gunners and drivers, with 230 horses.

Maury, the talented naval-meteorologist and star-gazer, now a fallen star himself, suggested a flying-arillery of heavy Paixhan guns, for coast defence. He was deemed a visionary. The future may prove how practical his views were.

Every Roland, however, has its Oliver. It is said that DE CHAMBRAY proved satisfactorily that one cause of the shipwreck of the French trains in 1812 was, "a great deal too many heavy guns were carried with the army, and that these were badly horsed."

In 1855 Duke William of Wurtemberg exhibited a new gun-carriage, the introduction of which was deemed advisable. It was constructed entirely of forged iron and weighed two hundred weight less than the common 6-pounder carriage, but *the chief* (and only new?) *feature* of the invention was, *that the gun is placed beneath the axle*, by which the chances of upsetting the gun were very much diminished. This placement of the piece would likewise increase its mobility.

4th. Nothing was more common in England, in olden times, than the rapid construction, over bad roads, of tram-roads with tram-plates. (See page 176, *Aide Memoire to the Military Sciences*, part I, vol. III, comprising P—R, London, 1851, Railways.

Now it is scarcely possible that the whole of a road can be impassable. Ascents are seldom deep with mud; down hill, mud or no mud, a team can draw anything. Consequently, the principal difficulty lies on flats, not drained artificially or naturally. By carrying stout planks or thin beams, a tram-road could be laid of sufficient extent to get the guns slowly but surely over bad roads and deep mire, assigning with this intent, a tram-train to each artillery-train of a brigade.

In the Crimean War an apparatus was tried by which a cannon laid a tram-way as it advanced over deep mud or morass. The tram-plates were attached to the fellies and were deposited and taken up as the wheels revolved. Whether the invention worked well or did not work at all, never appeared in the papers. It was mentioned as hopeful, but, as the English laid a railroad from Balaclava to their seige-works, perhaps, it was not generally introduced.

5th. Cattle on foot, in Europe, are often driven with an army, who thus carry their food with them on its own feet. Those cattle (farmers sometimes use their cattle while fattening) might be made to draw to-day and be eaten to-morrow, and cattle will draw with ease where horses will not lay out their strength at all. The Turks always, in their wars when Christendom trembled at their invasion, used buffaloes or oxen as artillery teams. The English substitute elephants in India. The Turks brought forward their guns, frequently very heavy, through marshy districts where there were no roads. In 1529 Solimant placed 100 heavy and 300 lighter guns in battery against Vienna.

The idea of working the cattle destined for food is not a novelty. In the Russian campaign of 1812 battalions of the wagons were drawn by oxen destined eventually for the shambles.

6th. Farmers transport heavy stones on stone-boats over boggy land where even the broadest tired ox-cart would go in up to the hubs. It would seem that sledges might be made for cannon transport over muddy roads, by using narrow (10 or 12 inches wide, 2 inches thick) oak plank as runners, turned up in front just sufficiently so as to ride and not to plough.

Such plank could be readily obtained, and this would seem the simplest, cheapest and most efficacious means of certain transport.

On submitting this question to one of the most scientific mechanics in this country, who has experimented extensively with artillery, he at once decided in favor of mounting the cannon on rude sledges in order to get them forward over marshy land or deep miry roads; and added, that in case planks were not handy to use as runners, the best substitutes were split logs, slightly hollowed to receive the wheels, selecting pine or hemlock in preference to hard and heavy wood.

That such a plan is the most feasible, has been established by more than one experiment in actual war. Lt. Col. Sleigh, B. A., mentions that at the remarkable siege of Louisburgh, in 1745, Lt. Col. Vaughan "employed his troops for fourteen successive days in drawing (heavy siege) cannon from the landing place to the camps, through a morass. To effect this, they were obliged to construct sledges, as the ground was too soft to admit of the use of wheels; while the men, with straps (bricoles) on their shoulders, and sinking to their knees in mud, performed labor requiring the strength of

oxen, and which could only be executed in the night, or during a foggy day, the morass being within view of the town and within reach of its guns."

7th. Provide very broad but light oak plank tires, steamed and bent to fit, whose width of surface would prevent any but the heaviest pieces sinking into any consistent mire; such wooden tires to be fastened on the outside of the common cannon, caisson and wagon wheels with clamps or clips, arranged to clasp round the fellies. This was an expedient used at one time in Europe, in assuring transit in sudden autumn, winter and spring thaws, In marshy districts or when the frost was coming out of the ground. This suggestion comes from an intelligent and extensive traveler, who had heard of or seen this method in practice.

8th. Small fascines or bundles of brush, or wattles, or hurdles, or bundles made of twigs, brush, or rods, laid close together (Suwarrow's plan), will form the best temporary roadway over a slough, and the writer has seen a perfect mud-hole a mile long, rendered perfectly susceptible of bearing heavy loads by such an arrangement. The only drawback to this is that fascines or brush, if unprotected, are liable to be cut to pieces by the prolonged and constant passage of heavy vehicles.

Why could not an army always, immediately and easily corduroy bad places, in such a wooded country as the Border States? A regiment, properly distributed, could corduroy two or more miles a day where wood was handy, i.e., sufficiently to afford secure and regular passage to trains.

To go back a little and repeat—how is it supposed that the armies of the XVII century moved their cannon in their Winter Campaigns, over roads certainly no better than our own, at a time, too, when artillery was more cumbersome and appliances more primitive. In fact, since trunnions were first used on guns, artillery carriages have changed but little in form; the great difference is in their weight, proportions and adjustment. Contemplate again for a moment the enormous trains which accompanied the Winter Marches of GUSTAVUS and his military successors. The motive power was certainly weaker, its application less scientific and practical than what we possess. The following appears to be the only explanation. Their movements were accomplished by greater will, moral *vim* on the part of the commander, greater exertion on the part of the commanded, greater discipline, self-denial, exertion and less humbug in the command. First they doubled, then they trebled the teams. If horses failed or refused to draw, they sent hundreds of men with ropes to the guns. Example BANER'S fording the Oder, twice in June, 1637, with the water up to his troops' necks. Upon this occasion the horses could not be compelled to exert themselves and the men were harnessed in their stead. Many other instances could be cited.

At the crisis of a battle is it not considered true generalship to sacrifice

two or three battalions to carry a position upon whose possession the conflict depends? Would not the same rule apply to using up an equal number of men, temporaly, practically, not prodigally, in getting forward a sufficient number of cannon to equalize the character of a battle, or to afford an army the superiority in guns upon a battle field? Generals decide such question for themselves. It would be actual humanity to use up a cargo of whisky and opium as stimulants, medically administered, and a brigade for the moment in an army of 200,000 men, in order to assure a preponderating mass of artillery at a given point in a certain space of time, in order to decide a campaign or the war. Opium, thus given, in small doses, was resorted to by the French surgeons to sustain life in the Russian campaign, with very happy effect; and a highly stimulating diet was all that enabled the Russian troops to undergo the severities of the winter march upon Khiva, in 1839–40.*

This may seem hard hearted, but which is the worse, to subject a column like McDonald's at *Wagram* to a concentrated fire of hundreds of guns by which thousands were killed, mutilated, crippled, or put *hors-de-combat*, or to use up, by the concentrated exertion of their own physical powers, an equal number whom rest and food would in time recuperate. In *Japan* and *China*, they move or carry junks, as large as ships, by human hands supplied and applied with scientific adjustment.

The French laid a rude plank-road across the marsh at the other side of the Beresina in 1812. This species of road, formed of boards hastily laid, not only saved the wrecks of Napoleon's army which escaped the catastrophe of the Beresina by enabling them "quickly to cross over the morass, into which they would otherwise have sunk, but the Russians in pursuing them were obliged to take a circuitous road, in consequence of the boards (or planks) being taken up and burned by the French."

An experienced Colonel suggested to temporarily *plank road* the worst places, and use as tractile power portable drawing machines. Another officer proposed to *tram* the roads with portable balks or beams, carried like pontoons on appropriate carriages, and apply steam engines, one to a battery and its equipages.

One fact, in this connection, is remarkable, that the traction over plank

* The genius of Frederic, which shone so brilliantly upon the battle-field, was by no means as lustrous in the trenches. This is attributed to his having been niggardly in his supplies of ordnance and commissariat stores (*munitions de guerre et de bouche.*) This should be a lesson to our administrative authorities. For instance, in April, 1758, at the siege of Schweidnitz, Col. Balby, a French officer, Colonel of Engineers in the Prussian service, satisfied that it was the want of proper supplies retarded the progress of the work, begged that the troops might receive adequate rations of good meat and beer. "For God's sake! sire," said Balby, more zealous than courteous, "do not look at the expense." Frederic had the good sense to appreciate the advice; the rations were increased and Schweidnitz fell. Men are perfect locomotive machines, and to keep their steam up, brisk fuel must be poured in.

or timber roads is to that over a good broken-stone road, according to condition, as 2 to 5; as 8 or 10 to a gravel or flint road; as 2 to 32 to the same in a wet, muddy state. (*Aide Memoire*, part II, vol. III, page 305.)

To extricate guns or equipages from a slough or quicksand, there is nothing like a *capstern* on a portable bed or platform. An extemporized *winch* or *windlass* would answer the same purpose, which could be readily constructed out of a round log, with cross handles (inserted through augur holes) resting on pins driven, slanting downwards, into large augur holes bored into heavy posts firmly established, taking care to bring the pressure, as near the ground as possible, upon the posts, *not* the supporting pins, on the side away from the object to be acted on.

Or else, apply the traction of bat-horses or even non-commissioned artillery officers' horses working in Dutch colars, in the same way that artillerymen draw by bricoles; or regular extra teams, one pair working parallelly on each side with their swingle trees fastened to a spar lashed to the regular splinter-bar, or else with the swingle-trees attached by long couplings or prolonges to the washer-hooks.

Consider what Gorgey's army encountered and surmounted. That which moved through, or rather laterally, (rendering the passage much more difficult,) over the mountains (take ALISON, which is the Austrian account,) from 15 to 20,000 effective, but just as small in proportion, to ours as were its numbers, just so much greater were the hardships and obstacles which it underwent and overcame, than those which we have to conquer in our winter movements. No one certainly would compare crossing the rolls of *Virginia*, to crossing the spurs of the *Carpathians* or the cold the Federal troops experience to dreadful weather with the Thermometer at FIVE. At *Kapolna*, Feb. 26–27th, 1849, the greatest battle in Europe since Waterloo, the Austrians and Hungarians had each about 40,000 men, and from 200 to 225 guns, a far greater number than we have had in action, or the enemy could possibly have presented.

At *Issaszeg*, April 5th, 1849, Gorgey had 43,000 and the Austrians about that number; guns from 160 to 190 on either side.

Again, if our armies are divided by mountains, so were the Hungarians and Austrians, and more divided, if not so far divided. BEM was at work in *Translyvania* and PERCZEL in the *Banat*, extreme points; more extreme in regard to Gorgey than Kentucky and Missouri are to Virginia.

Under the Lower Empire the Romans carried their artillery engines, an hundred times more cumbrous than modern artillery, into the remotest districts, with their legions. How are we to suppose that they passed them over deep alluvial soils in wet seasons? There is little question but that it was done by extemporized plank or corduroy roads.

One of our most distinquished Generals, since killed, to whom this matter was referred, appeared to doubt about Gorgey's transporting cannon over roads as bad as those in Virginia To settle the question, examine Paget's Hungary and Transylvania, published in 1850. He journeyed as a traveler in 1835 over the same districts, BEM, PERCZEL and GORGEY marched and manœuvred. He says nothing can be worse than they were, and that in the autumn it took three days to accomplish what one day sufficed for in summer. "*The road was only a muddy track.*"

He speaks of, and describes, traversing a road used by the Translyvanian ladies as a feat far more dangerous than riding a steeple-chase; and yet this was the very ground Trajan fought over and beat DECEBALUS, king of the *Daci*, A. D. 101.

The carriers, there, harness eight to ten small horses to draw a load of about 2 tons. From *Szolnok to Abany*, in a rich, boggy loam land over which it would appear that KMETY moved before *Kapolna* in February, and GORGEY certainly manœuvred, in March, before *Issaszeg*, the road is worse than the fields, and a gentleman told PAGET he had occupied sixteen hours traveling ten miles in a light carriage drawn by twelve oxen. Col. Pragay says that at Egerfarmas it was so miry, and the neighborhood so marshy, that with eight horses to each, the Hungarians were for the time unable to bring any but 3-pounders into use.

The more the writer reflects upon it, the more he is convinced that the simplest method is the best in this case, and to *plank* or *corduroy* the roads could be accomplished with comparative ease in such a wooded country as Virginia.

"How often the question has been asked, how to get cannon and trains forward over bad roads, where no preparations, to that end, have been made? Many plans have been suggested; among them, to *corduroy*, as remarked before, as the troops advance, as the most simple and efficacious. The only feasible mode found available, it is said, practically, at the West, was to *corduroy*. Only they split the logs and laid them rounds up. Now, a better plan would seem to be—rounds down; rough hew the rounds and put split inside up, making a more even and secure road. Or else, if it is quicker, lay rounds up and fill in the interstices with brush trimmed off of the trees used to corduroy, in order to break the shock of the ruts and hollows, and to level generally."

Examine the following list and observe what enormous masses of artillery have been disposed on certain battle-fields.

At *Bruges*, 3d May, 1382, Philip van Artevelde defended the front of his forces of 5,000 men of Ghent, with 200 light field pieces.

At *Granson*, in Switzerland, no summer land, March 3d, 1476, Charles the Bold, of Burgundy, had in battery, according to one account, 160,

according to other statements, 420 cannons. The writer has seen one of his guns* at Bale, a huge culverin, twice as long and cumbrous as any gun our troops ever saw mobilized in the field. The cannon of the Duke ranged from 7-pounders to 30-pounders, and were mounted on carriages very similar to the old Gribeauval flask-trails, with an ammunition box between the flasks or sides of the old pattern fan-tail stock.

At *Nancy*, January 5th, 1477, the same sovereign-duke had with him 40 heavy guns.

This Prince was accompanied to the field by a baggage train which would appal our transportation department at the mention of it. In fact, he transported his court, his pomp and all his retinue, magnificent almost beyond conception, along with a luxurious train of camp and military equipages. His artillery ammunition train comprised 2,000 caissons, and while marching against *Dinant* in 1466, extended nine miles in length.

At *Wimpfen*, 8th April, 1622, Tilly took from the Baden Army 20 guns and 1,800 wagons.

At *Breitenfeld*, 7th September, 1631, Gustavus brought into action 100 regimental and field guns, of divers small and great calibres, distributed in 14 batteries. Tilly opposed to these 16 24-pounders and 20 lighter pieces.

At the *Passage of the Lech*, 22d March, 1632, after very rainy weather, the Swedes protected the formation of their bridge with the cross-fire of 72 guns, distributed in four grand batteries.

At *Burgstall*, 24th August, 1632, Gustavus and Wallenstein, each, had from 80 to 104 guns of different calibres in action, although the ground was so miry and slippery from rain that it very much impeded their movements into position.

At *Lutzen*, 6th November, 1632, where, as we know from contemporary accounts, as there were no roads, the Swedes advanced over ploughed lands, a wet country, where "the ground clung to the mid-leg like clay," morasses, and a "creeping, half-stagnated rivulet," yet they carried into battle with them 20 to 26 heavy pieces, in 5 batteries besides, at least, 40 lighter guns assigned to the different brigades.

At *Nordlingen*, (1st), 6th September, 1634, the Imperialists took from the Swedes 80 guns and an immense train.

At *Wittstock*, 24th September, 1636, the Swedes took 41 cannon, from 3-pounders to 24-pounders, and an immense quantity of ordnance stores and their means of transportation.

At *Wittenweier*, 30th July 9th August, 1638, the Swedes captured 11

* This may be an error of the Guide Book, and the cannon may have been a German 12-pounder or 16-pounder of 1514, as just such a piece is represented at fig. 8, plate VII, vol. I, of Louis Napoleon's famous "*Etudes sur l'Artillerie.*"

guns, all the Imperialists' caissons, their whole commissariat train, the entire supply-train for the relief of Brisach, in all over 3,000 wagons.

At *Zentha*, 11th September, 1697, the Turks abandoned 72 cannons, 5,000 horses, 6,000 camels and 12,000 oxen, which at four to a team, would represent 3,000 equipages.

At *Belgrade*, 16th August 1717, the Turks lost 131 (out of 180) cannons, 30 mortars, some of which threw shells of 224 pounds, immense supplies, and a camp equipage for 174,000 men.

At *Fontenoy*, 11th May, 1745, the French positions were defended by no fewer than 220 cannon. It has been considered that the result of this battle suggested the massing of numerous batteries against a strong point of the enemy's line, and gave the first example of the extensive employment of artillery in the field, of which Frederic afterwards so greatly availed himself. In this year Marshal Saxe took the field at the head of 70,000 of the best troops in France, with 160 guns of heavy calibre and 60 mortars.

At *Rocour*, 11th October, 1746, after a soaking rain, Marshal Saxe sustained his attack on the drenched field with 120 guns and took 50 guns from the Allies.

At *Gross Jaegendorf*, 30th August, 1757, the Prussians had 64 cannons, the Russians 300, in action. The former beat and took 67 to 80 guns.

At *Lissa*, 5th December 1757, Frederic the Great had 167 guns and took 116, together with 4,000 caissons or ammunition wagons.

At *Zorndorf*, 25th August, 1758, Frederic had 117 heavy and 76 lighter pieces. In this battle the Prussians lost 103 guns, yet had the best of it, for although the Russians lost only 27 guns, they retreated.

At *Hochkirch*, 14th October, 1758, the Prussians lost 101 guns, of them 31 of very heavy calibre, and nearly their whole camp equipage.

At *Kunersdorf*, 29th August, 1759, Frederic had 230 guns to 43,000 men, the Russians and Austrians, under Soltikoff and Laudon, 190 pieces to 70,000 men. The Prussians were defeated and lost 172 cannons, yet reorganized their army and artillery sufficiently to maintain themselves, and close the year gloriously and in comparative safety.

At the capture of the famous *Lines of Mayence*, 29th October, 1795, the Austrians took 138 great and small pieces of artillery, 250 provision wagons and 144 artillery caissons. The French, to prevent their falling into the hands of the enemy, blew up 300 caissons besides.

At *Eylau*, 8th February, 1807, fought in the midst of a furious snow-storm, over frozen lakes and morasses, the Russians and Prussians had 460 cannon to 64,000 to 75,000 men, the French 350 to 70,000 to 85,000 men. After "incredible hardships and dreadful warfare," this was an enormous material to mass on one field.

At the *Moskowa*, 7th September, 1812, the Russians displayed 640 guns and from 120,000 to 132,000 men, the French 590 cannons and 127,000 to 133,000 men. The Russians, although worsted, left no trophies, except wrecks to the victor.

At *Lutzen* 2*d* and at *Bautzen*, 20th and 21st May, 1813, notwithstanding all his losses of material in the disastrous Russian campaign, Napoleon brought forward 350 (von Kausler says, at Bautzen, according to calculation not returns, 720) pieces of artillery, although he opposed at *Leipsic*, 16th, 17th, 18th and 19th October, 1813, 719 cannon, to the concentric fire of the 1,384 guns of the Allies. Many of the latter, doubtless, were his own, captured in the retreat from Moscow, whither he conducted 1,300 pieces of artillery and a train of equipages which required 187,000 draught horses.* Then, after his exile to Elba, he marshalled at *Ligny* and *Waterloo*, 16th aud 18th June, 1815, from 230 to 252 guns. So much for the activity, energy and genius of one man.

In the Hungarian campaign, notwithstanding apparently insurmountable obstacles and difficulties, want of roads, horrible weather, exhaustion of men, means and money, what masses of artillery were brought into action on the different fields of 1849:

February 26th–27th, *Kapolna*, Austrians and Hungarians each from 200 to 225 guns, 400 to 450 responding.

April 4th–5th, *Isaszeg*, Austrians and Hungarians each from 160 to 190 guns, 320 to 480 responding.

In May the Austrians had 258 guns harnessed, the Hungarians 488 to 574 perfectly equipped. Add to these the Russian batteries at least as many as the Austrians, and there were 1,100 guns vomiting death upon the Magyar scenes of conflict.

July 11th, *Komorn*, Gorgey opposed 206 to Haynau's 176 guns.

August 4th, *Szegedin*, Hungarians under Dembinski 35,000 strong with 100 guns, the Austrians under Haynau had a much greater number engaged on this flat and marshy land.

August 10th, *Tomesvar*, Hungarians under Dembinski and Bern 50,000 with 130 to 140 guns; Russians and Austrians under Haynau, according to their account, 32,000 with 190 guns.

After several defeats Gorgey still had 60,000 men and 200 pieces of artil-

* Thibaudeau alleges that 500,000 men were together when Napoleon crossed the Niemen; that this force was accompanied by 1,200 cannon with 3,000 artillery wagons, and 4,000 wagons for the commissariat and other uses, and that in addition to the cavalry, 200,0 0 horses [besides draft-oxen] were employed. The Russians gave to the Prussians under York, guns which they had taken from the French. In 1813, Napoleon had 1,300 pieces of artillery, employed partly in the fortresses between Dresden and Hamburg and partly in the field.

lery, but they were not concentrated although close at hand. At Vilagos, August 13, 1849, Gorgey surrendered 140 well horsed and equipped guns, and the other generals, 17th, 19th, same month, delivered up 91 pieces.

This shows how energy and authority can get artillery along with armies and into action under the most difficult circumstances,* but to do so requires,

1st. The union of Executive and Administrative powers in the Commander-in-Chief in the field.

2d. That instead of the Commanding General having NO *control* over the Engineer, Medical, Quartermaster, and Commissariat, &c., Departments, he should have, and did have, in the cases cited, ALL *the control* in his own hands.

3d. The union of the Transportation and Commissary Departments, making the first subordinate to the second and the second responsible for the backslidings and deficiencies of both, thereby restricting the Quartermaster's Department to the duties indicated by its very name, i.e. to precede the troops, pick out encampments, prepare themselves and be ready to point out wood and water, regulate stoppages on the march, etc., etc.

4th. An organized Train-Corps, for the service of the Administrative branches, just as all the leading military powers possess, as systematized and responsible as the Artillery itself.

5th. ☞ *Feed the horses*—DE CHAMBRAY, according to Schlosser, the best writer on the Russian campaign of 1812, affirms that the French horses, notwithstanding their inferior capacity of endurance, and unacclimatizing would have stood the cold and work perfectly well had they been properly fed. Hard food and enough of it for the teams and sufficient time to eat it, would, with good drivers, responsible to discipline, get many a park and train steadily over a piece of road in which it now sticks fast.

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* Turner' quaint old work on military matters, published at the close of the XVIIth Century, demonstrates what influence the clumsy artillery of his era exerted upon a desperate campaign:

"The Swedish Trains of Artillery, since their first footing in Germany (1630) have had the reputation to be the most exactly composed. and conducted by the most experimented artists of any in Christendom. And no doubt but their Artillery helpt them much to take so deep a footing in Germany, that they have not been since expell'd out of it though that hath been much endeavored. When the late King of Sweden (Charles X) invaded Poland, In the year 655, the perfidy of the Polonians was such that they delivered almost that whole Kingdom into his hands But after they had returned to their duties, and that the Swede was at Zamoiskie in the year 1657, it was by the help of his Artillery (whereof Johns Casimir was destitute) that the Swedish King traversed much of the length of Poland, in spite of 80,000 Polonions; crost the Weichsell (Vistula), and joined with Ragoski; and after he was forced to part with the Transylvanian, (being invited to come nearer home by the King of Denmark's unseasonable declaration of a war against him) he came out of Poland and Prussia too with a very inconsierable, ill-appointed and harass'd Army, without any loss at all, meerly by the advantage he had of his Train of Artillery."

The battles of the Seven Years' War, remarks TAUBERT, were fought with a very large quantity of artillery in proportion to the number of troops engaged; thus there were

	Date.	No. Men.	Pieces.
At Lowositz,	1st Oct. 1756	24,000 to 30,000	102 Prussians.
		33,354	94 Austrians *
Prague,	6th May 1757	64,000	192 Prussians.
		60,000	180 Austrians.
Collin,	18th June 1757	34,000	102* Prussians.
		53,790 to 60,500	Tremendous batteries and many siege pieces along their entire lines, numbers no where given. Austrians.
Gross Jaegendorf,	30th Aug. 1757	28,000	64 Prussians.
		60,000	300 Russians.
Rossbach,	5th Nov. 1757	21,600	72 Prussians.
		63,000 to 70,000	72 at least. French and Troops of all the German Circles.
Breslau,	22d Nov. 1757	25,000 to 30,000	138 Prussians.
		80,000 to 90,000	40 to 56 24-pdrs., and an overwhelming force of lighter guns. Austrians.
Leuthen,	5th Dec. 1757	30,000 to 32,000	167 Prussians.
		80,000 to 90,000	134 taken by Pruss. Aust.
Zorndorf,	25th Aug. 1758	32,700	193 Prussians.
		52,000	117 heavy, besides the regimental guns. Russians.
Zullichau (Kay' Palzig),	23d July 1759	25,000 to 27,380	Not stated. Prussians.
		72,000	200 Russians.
Kunersdorf,	12th Aug. 1759	43,000 to 48,000	230 Prussians.
		88,000 to 96,000	"A prodigious number," of cannon, 190 heavy guns in battery to defend the positions. Russians and Austrians.
Leignitz,	15th Aug. 1760	27,000	120 Prussians.
		35,000	86 taken by Prus. Aust.
Torgau,	3d Nov. 1760	44,000	245 Prussians.
		64,000	400 Austrians.
Freiberg,	29th Oct. 1762	27,000	100 Prussians.

In 1778 the Prussian army of 90,000 men under Prince Henry, near Dresden, had 400 pieces of artillery in the field.

As an evidence of what enormous trains are necessary to an army, and were collected and brought forward by Frederic the Great; of the importance of a well organized commissariat and quartermaster's department; of the danger to which such aggregations of supply-transport are exposed; and of the terrible effect of their non-arrival and loss, take the example of Laudon's successful on-fall at Domstadt.

In May—June, 1758, a convoy of 4,000 wagons laden with ordnance and commissariat stores were collected and sent from Troppau, on the boundary of Silesia and Moravia, forward for the supply of Frederic's army, especially that engaged in the siege of Olmutz in Moravia. The escort, under Colonel

* The Austrian and Imperialist (Troops of the German Circles), Russian and French forces and artillery, and other facts added to Taubert's list, from VON KAUSLER, Cust, Towers, Dover, &c.

Mosel, consisted of 10,000 men. Laudon, who died an Austrian field marshal "Austria's Paulus-Emelius and Marcellus," was despatched to intercept it.

Landon was Frederic's evil genius. Traun and Laudon, the great king esteemed his ablest opponents, and yet neither commanded-in-chief in any decisive battle against him. It was their genius, their practical strategy he feared and felt. Traun manœuvred him out of Bohemia in 1744. Just in the same way that Louis XIV through pique refused the services of Prince Eugene, from whom he suffered the greatest losses and injuries, so Frederic refused those of Landon, because he did not like his looks. Both monarchs expiated their errors terribly. A third similar case was Ferdinand II, of Austria's denial of a command to Konigsmark, the most talented partisan general of the Thirty Years' War. All three lived to be the deadliest foes and most dangerous opponents, particularly the two first, of the sovereigns who had despised the offer of their swords.

The present case was an opportunity for Laudon's vengeance, and he improved it.

In the first attack (June 28th, 1758), upon the convoy, Laudon's hussars and Croats, who had learned their business from his example—for he made his debut as a major of partisan cavalry under the notorious Trenk—took 100 wagons and stopped the laborious march of the rest, for the country was rough and the roads very bad. Most of the teamsters either cut their traces and fled back towards Troppau or dispersed into the country and bye-ways. Mosel spent the 29th in trying to restore order and sent estafettes to Frederic for assistance. The renowned cavalry General Ziethen was despatched to his support with 5,000 troops. The next day, June 30th, Landon suffered from 150 to 400 wagons to get through the defile of Domstadt and then fell on the convoy before Ziethen came up. Mosel formed the greater part of the convoy into a wagon-fort, by turning the wagon rears to the enemy and drawing them up close together so as to form a sort of rampart, behind which he posted his troops. All was in vain; Laudon, repulsed at first, again attacked so furiously he put the escort to flight and beat back Ziethen, killing General Puttkammer and 800 officers and men, wounding about 1,200 and taking prisoners 700. Ziethen was forced to fall back upon the main army after desperate but futile efforts. The great result was, Frederic was obliged to raise the siege of Olmutz and retreat from Moravia; half this year's campaign was thus brought to naught. Laudon received the Grand Cross of Maria Theresa, and the commission of Field Marshal Lieutenant.

[On the 21st February, 1798, when the Russian Marshal Fermor left Konigsburg and marched towards Pomerania, he carried with him provisions for his army on 30,0 0 sledges.

In 1744 the Count de Maillebois retreated across the Alps from Piedmont into Savoy, amid the suffering from want of supplies, the difficulties of a mountain transit, a very

rainy season, and the incessant attacks of guerillas and regulars, yet brought through in safety a convoy of 4,000 laden mules and 1,000 wagons.

"With respect to the preparations made and measures adopted by the Emperor of the French, the multitude of wagons, the long trains of artisans and workmen of every description, masons, armorers, and even gardeners, tailors, and shoemakers, gave to those of us, who were lookers on in Frankfort-on-the-Main, the idea of the emigration of a whole people, or of the transportation of the civilization of France to northern regions." * * * * * * *

There were 26 squadrons of heavy wagons, divided into companies. Each company was commanded by a Lieutenant and every squadron by a captain. The wagons were sometimes drawn by horses and sometimes by oxen. The means of transport were governed by systematic and methodical arrangements which descended to minute regulations; even with respect to the treatment of draft-oxen Well-disciplined drivers, excellently fitted for the management of those thousands of wagons under their care, were subjected to military organization and hierarchy of rank.

Besides these there were lighter wagons, divided into battalions, of which each battalion, drawn by oxen, transported an aggregate of 240 tons.

Besides these there were again 600 light wagons, styled "comtoises," each battalion of which was laden with 50 tons. These wagons "*a la comtoise*" were not only light and commodious, but very manageable. They were so arranged that they could retreat without turning, by means of a slight change of gear by which the limber became the wagon itself and *vice versa*. Their teams were cattle intended to be butchered when provisions ran short, or when the food with which the wagons was laden had been consumed, in case there were no magazines at hand whence they could be replenished.

Although Napoleon's organized wagon train was wrecked before it reached Wilna, he left Moscow with 5,000 baggage wagons, besides 500 cannon and 2500 artillery wagons.]

This shows what enormous convoys are necessary to an army; that neither the enemy, difficult ground, a wet season, bad roads, nor poverty in a Government, must hinder their preparation and forwarding. Its arrival in the lines of Olmutz would have been equivalent to the success of an ordinary campaign, its capture was more detrimental than the losses of a battle. The collection and conduct of this convoy reflects great credit on the Prussian commissariat and quartermaster's department. Its miscarriage was chargeable solely to the defeat of its escort.

Consider what Paskiewitch overcame in the remote north-east of Asiatic Turkey in 1829, when to subsist 12,000 men in that mountain region required 1,848 chariots and 2,250 horses of burden, and yet he conquered by his *active Marches*, accomplishing, despite the enemy without, and the plague within, the enemy's fortified lines, snow, mountain-passes scarcely bare of snow in summer, 250 German—nearly 1,000 actual—miles of march, besides sieges (that the Turks were great in defending towns and fortresses no one can deny,) and battles, bloody and hard-contested. But Paskiewitch was a genius.

Then read in SLADE'S Turkey, and other works treating of DIEBITCH'S campaigns what the Russians overcame in European Turkey in the twin campaign. Many officers despise the Turks. Well and good, but they cannot despise the natural difficulties of a wild country, possessing a climate just about as chargeable as our own, only ruder. It is well-known (the writer once wrote a sketch of this campaign, and examined every available authority,) with an "armee manœuvriere" and a tete-de-fer every thing can be overcome, even nature, that is Providence not antagonistic. In this campaign the Russians lost 82,000 in the hospitals alone, and Moltke says that without exaggeration nearly one-half of their effective force perished in the first campaign by disease or in battle. Still Diebitsch brought Mahmond to the feet of Nicholas.

Nothwithstanding these losses, the Russians of Diebitch crossed the Balkan, carrying the plague with them, aad fighing the enemy and nature. What there was of roads scarcely deserved the name; the heat was insupportable, the stony ground actually burnt the soldiers' feet, the fever was spreading with increased violence, the fountains were destroyed, water failed, and yet the Russians accomplished 60 miles in five days, carrying with them all the supplies they used. So much for summer difficulty. Paskewitch, on the contrary, had to encounter cold, snow, heavy rain, and all the vicissitudes of winter—spring in barbarous and extremely mountain regions. And yet he manœuvred 76 guns triumphantly. If any one doubts what horrible impediments he encountered, let him read Duncan's campaign, with the Turkish troops in Asia, especially the account of his journey in February, 1854, from Trezibond to Kars. Not before the last week in May could the garrison leave the pestllential town to encamp on the plain outside.

In January, 1831, the Polish revolution broke out. The Poles had 45,800 or about 50,000 troops and from 96 to 126 cannon, the Russians 111,000 (some accounts say 200,000, others 300,000) men with 396 cannon. Compare a campaign in the Polish snow, slush, and sludge, with anything we have undertaken. At the battle of Grochow, 18th February, 1831, Radziwil with 48,000 men and 126 guns, beat Diebitsch with 74,000 men and 276 guns. At Praga, 24th–25th February, another battle took place in which the Russians had 80,000 to 180,000 (according to Polish reports) men and 316 cannon, and the Poles about 48,000 men and 100 to 126 guns, about same as at Grochow. Notwithstanding the bad weather the sleet, slush, and swampy soil, Dwernicki took so many guns from the Russians, that he acquired the surname of the "Furnisher of Cannon" to the Polish army.

In this campaign the roads were impracticable in March—April for artillery and Skrzynecki was prevented from following up his great success againt the Russians' corps in detail because he could not carry his guns along with him. He beat the Russians on several points, March 31st, again, April 1st, and then fell back against the advice of *Prodzynski*, who argued (as before mentioned) that if the Poles could not get their guns along the chances were still equal, for the Russians could not manœuvre theirs.

Meanwhile, the cholera was making fearful ravages in both armies, and June 10th Diebitch died of it at Paltusk, and the Archduke Constantine fell a victim to the same pestilence on the 27th at Witepsk. Let us praise God that our armies have been spared such a visitation and emulate the activity of the Poles and Russians in these fearful winter and spring campaigns of 1831.

At Warsaw, Paskiewitch having succeeded Diebistch and Kruhowieckzski to Skrzynecki, the fate of Poland was decided 6th–7th September, 1831. The Russians had 89,000 men and 386 cannons, the Poles about 57,500 men with 216 guns, of which 136 were harnessed. Can we not do as much as either in getting our guns into action, and our trains forward despite weather and seasons?

Remember Miller's reply at Lundy's Lane in 1812—"I'll try, sir!"

He did try like Hannibal, Gustavus, the Nassaus, Cromwell, Frederic, and their peers tried, zealously and honestly, not half-heartedly.

Miller did not try like those of whom it was and may be said,

> "War they waged as a jest 'twere thought—
> And but half a heart to the business brought."

And he succeeded. Anchor.

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